

# ARNOLD & PORTER



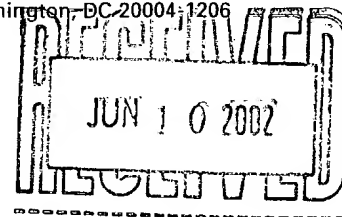
May 23, 2002

Commissioner for Patents  
Washington, D.C. 20231

Re: U.S. Utility Application No. 09/986057  
Filed: November 7, 2001  
For: Broadband Communication For Satellite-Ground or  
Air-Ground Links  
Inventor: Paul CHRISTOPHER  
Ref. No.: 16847.002

202.942.5000  
202.942.5999 Fax

355 Twelfth Street, NW  
Washington, DC 20004-1206



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Dear Sir:

Transmitted herewith for appropriate action by the U.S. Patent and Trademark Office (PTO) are the following documents:

1. Information Disclosure Statement;
2. Form PTO-1449 (with 15 attached references);
3. Return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment to our Deposit Account No. 50-1824 referencing matter number 16487.002.

Sincerely,

Michael J. Songer (Reg. No. 39,841)  
William Sekyi (Reg. No. 45,831)

Enclosures

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Paul CHRISTOPHER

Appln. No.: 09/986057

Filed: November 7, 2001

For: Broadband Communication For Satellite-Ground or Air-Ground Links



Group Art Unit: 3662

Examiner: To Be Assigned

Atty. Docket: 16847.002

**INFORMATION DISCLOSURE STATEMENT**

Assistant Commissioner for Patents  
and Trademarks  
Washington, D.C. 20231

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Dear Sir:

The attention of the Examiner is invited to the documents listed on the attached Form PTO-1449. Copies of the listed documents are attached.

It is respectfully requested that the information above be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

**CERTIFICATION AND/OR FEE**

Because this Information Disclosure Statement is being submitted prior to issuance of the first action on the merits of the above-captioned application, no certification or fee is required.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael J. Songer".

Michael J. Songer (Reg. No. 39, 841)  
William Sekyi (Reg. No. 45,831)

Date: May 23.02

ARNOLD & PORTER  
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PTO/SB/08A (08-00)

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Substitute for form 1449A/PTO

# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 2 of 2

## **Complete if Known**

Application Number	09/986057
Filing Date	November 7, 2001
First Named Inventor	Paul Christopher
Group Art Unit	3662
Examiner Name	Unassigned
Attorney Docket Number	16847.002

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**MAY 28 2002**

**GROUP 3600**

## **OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		F. BARBALISCIA, M. BOUMIS, A. MARTELLUCCI, World Wide Maps Of Non Rainy Attenuation For Low-Margin Satcom Systems Operating In SHF/EHF Frequency Bands, Viale Europa 190, 00144, Roma-Italy.	
		F. BARBALISCIA, M. BOUMIS, A. MARTELLUCCI, Characterization Of Atmospheric Attenuation In The Absence of Rain In Europe In SHF/EHF Bands For VSAT Satcom Systems Applications, Viale Europa 190, 00144, Roma-Italy	
		T.S. CHU and D.C. HOGG, Effects of Precipitation on Propagation at 0.63, 3.5 and 10.6 Microns, The Bell System Technical Journal, May-June 1968 Volume 47, Number 5, Page 723,	
		J. DRAIM, DR. P. CEFOLA,, DR. D. CARTER, DR. R. INCIARDI, DR. R. PROULX, D. LARSEN, IAF-01A.1.03 Beyond GEO-Using Elliptical Orbit Constellations to Multiply The Space Real Estate, 52 <sup>nd</sup> International Astronautical Congress, 1-5 October 2001, Toulouse, France	
		J. DRAIM, DR. P. CEFOLA,, DR. D. CARTER, DR. R. INCIARDI, DR. R. PROULX, D. LARSEN, IAF-01A.1.03 Beyond GEO-Using Elliptical Orbit Constellations to Multiply The Space Real Estate, Paper Presented at the 52 <sup>nd</sup> International Astronautical Congress, 1-5 October 2001, Toulouse, France	
		J. DRAIM, DR. R. INCIARDI, DR. R. PROULX, DR. P. CEFOLA, DR. D. CARTER, SSC01-II-3 Demonstration of The Cobra Teardrop Concept Using Two Smallsats in 8-Hour Elliptic Orbits, 15 <sup>th</sup> Annual AIAA/USA Conference On Small Satellites, August 13-16, 2001, Logan, Utah	
		P. CHRISTOPHER, Constellations For High Elevation Angles, International Aeronautical Federation, Nov. 1997, Toulouse France.	
		H. J. LIEBE, An Updated Model For Millimeter Wave Propagation in Moist Air, Radio Science, September-October 1985, Volume 20, Pages 1069-1089, National Telecommunications and Information Administration, Institute for Telecommunication Services, Boulder, Colorado, accepted March 26, 1985.	
		A.H. JACKSON, P. CHRISTOPHER, Angle Diversity For Millimeter Wave Satellite Communications, May 1996, Satellite Systems For Mobile Communications and Navigation, 13-15 <sup>th</sup> , Conference Publication No. 424.	
		J. DRAIM, P. CHRISTOPHER, IAF-00-M.5.02, Expanding Global Communications Capacity Using Higher Frequency Bands With Elliptical Satellite Constellations, 2-6 October, 2000, 51 <sup>st</sup> International Astronautical Congress, Paris, France	
		K. WILSON, M. ENOCH, Optical Communications For Deep Space Missions, August 2000, IEEE Communications Magazine, pgs. 134-139.	
		P. CHRISTOPHER, Millimeter Wave Satellite Communication, Selected Papers, Volume I Satellite Orbits, Feb. 25, 2000, Leesburg, Virginia.	
		P. CHRISTOPHER, Millimeter Wave Satellite Communication, Selected Concept Papers, Volume 2, Satellite Orbits, Feb. 25, 2000, Leesburg, Virginia.	
		P. CHRISTOPHER, Satellite Communications For KaBand Communication, KaBand Utilization Conference, May - June 2000, Cleveland.	
		P. CHRISTOPHER, Worldwide Infrared and Millimeter Wave Satellite Performance, SPIE Laser Conference, San Jose CA, Jan. 25, 2001.	

Examiner  
Signature

Date  
Considered

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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